

Date: Tuesday, 3/20/2007 1:51:02 PM  
 User: Kim Johnston

## Process Sheet

Customer : CU-DAR001 Dart Helicopters Services	Drawing Name : 212/205 HIGH AFT X-TUBE ASSEMBLY
Job Number : 31362	
Estimate Number : 10257	
P.O. Number : N/A	Part Number : D212664201
This Issue : 3/20/2007 S.O. No. : N/A	Drawing Number : D212-664-241 REV B
Prsht Rev. : NC	Project Number : N/A
First Issue : N/A	Drawing Revision : B
Previous Run : 31361	Material : N/A
Written By : <u>                    </u>	Due Date : 4/15/2007 Qty: 1 Um: Each
Checked & Approved By : <u>                    </u>	
Comment : Est Rev: E 04.02.16 Reformat K/DS	
Est Rev: F 06-03-29 Remove Coments on Pick List JLM	

## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
---------	-----------------------	---------------

1.0

DC

DOCUMENT CONTROL



KS 07-05.04

Comment: DOCUMENT CONTROL

Photocopy bluefile and create labels as per PPP D212-664-201CHG002

CZ  
Magna band

2.0

D6006129

Crosstube material



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty Part number Description Batch

1 D6006-129 Crosstube 25666

Check OD = 3.250"; ID = 2.220"

SB 07/04/13

3.0

MORI SEIKI

MORI SEIKI CNC LATHE LARGE



Comment: MORI SEIKI CNC LATHE LARGE

1-Fill tube with sand &amp; install plugs DT8534 on both ends as per Folio FA114

2-Turn first side as per Folio FA114

3-Deburr &amp; Inspect for surface damage. Repair damage within limits as per Dwg D212-664-241.

SB 07/04/13

4.0

QC1

INSPECT ALL DIM TO DIM SHEET



Comment: INSPECT ALL DIM TO DIM SHEET

MS 07/04/13

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

## Process Sheet

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Part Number: D212664201

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

MORI SEIKI

MORI SEIKI CNC LATHE LARGE



Comment: MORI SEIKI CNC LATHE LARGE

1-Turn second side as per Folio FA114

2-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D212-664-241. MS 07/04/14 1

6.0

QC1

INSPECT ALL DIM TO DIM SHEET



Comment: INSPECT ALL DIM TO DIM SHEET

MS 07/04/14 1

7.0

QC8

SECOND CHECK



Comment: SECOND CHECK

BC 07-04-16 1

8.0

MORI SEIKI

MORI SEIKI CNC LATHE LARGE



Comment: MORI SEIKI CNC LATHE LARGE

1-Remove sand and plugs

2-Scribe part # and batch # using vibrating stylus as per Dwg D212-664-241

MS 07/04/14 1

9.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Polish entire outside surface of crosstube

JB 7-4-16

10.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

AP 7-4-16

11.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1 within 24 hours of machining

JB 7-4-16

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Drawing Name: 212/205 HIGH AFT X-TUBE ASSEMBLY

Job Number: 31362

Part Number: D212664201

Job Number:



Seq. #:

Machine Or Operation:

Description :

12.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

BE 07-04-23

13.0

BENDING

BENDING MACHINE



Comment: BENDING MACHINE

Bend tube as per Dwg D212-664-241 using CNC bender program 212-af and Folio FT007

EL 7-4-23

14.0

QC15

DIMENSIONAL CHECK OF X-TUBES



Comment: DIMENSIONAL CHECK OF X-TUBES

7-04-25

15.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Drill pilot holes in tube as per Dwg D212-664-241 using drill Jig DT8550 & DT8551

2-Ream hole to finish size in tube as per Dwg D212-664-241 using drill Jig DT8550 & DT8551. Check dimensions between holes, both sides on both cuffs, to ensure alignment with saddle holes.

3-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D212-664-241

25  
07-04-25

JD 7-4-26

16.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1 within 24 hours of bending and drilling

JD 7-4-26

17.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

07-05-04

18.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

07-05-04  
LPE

19.0

OUTSIDE SERVICE

OUTSIDE SERVICES



Comment: Sub-Contracting OUTSIDE SERVICES

Liquid Penetrant Inspection as per QSI 038

Issue P/O: 3700

LPI as per ASTM 1417 Level 2

07-05-04 ①

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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Job Number: 31362

Part Number: D212664201

Job Number:



Seq. #:

Machine Or Operation:

Description :

Attach copy of NDT results to work order

20.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Inspect for transit damage Ensure copy of NDT results attached to work order.

07/10/10

21.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: DIMENSIONAL CHECK

Inspect for damage & ensure results are as per Dwg D212-664-241

07-05-14 (1)

22.0

SPRAY PAINTING

SPRAY PAINTING



Comment: SPRAY PAINTING

1-Prime inside and outside crosstube as per QSI 005 4.2

2-Paint outside crosstube with White Imron as per QSI 005 4.2

} RT 07-05-22

23.0

QC14

Inspect Spray Paint



Comment: Inspect Spray Paint

Then, Wrap in plastic bag to protect from scratches

07-05-23 (1)

24.0

D2856600

Abrasion Strip



Comment: Qty.: 0.8400 f(s)/Unit Total : 0.8400 f(s)

Pick:

Qty Part number Description Batch

2 D2856-600-1009 Abrasion Strip

NA Magnabond 103628

25.0

D29401

Support



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Pick:

Qty Part number Description Batch

2 D2940-1

Support

24367

RT 07-05-23

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Job Number: 31362

\* Part Number: D212664201

Job Number:



Seq. #:

Machine Or Operation:

Description:

26.0

MS2192028

Clamp(per MIL-DTL-8783C)



Comment: Qty.: 4.0000 Each(s)/Unit Total: 4.0000 Each(s)

Pick:

Qty Part number Description Batch

4 MS21920-28

Clamp

103896

27 07-05-23

27.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Install abrasion strips as per QSI 035 using DT8582

2-Install supports and clamps as per Dwg D212-664-241. Torque clamps to 80-100 in lb.

27 07-05-23

28.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

29.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Pick Packing Kit

30.0

D34281

Placard



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Placard

Batch:

B26249 -

31.0

AN640A

Bolt



Comment: Qty.: 4.0000 Each(s)/Unit Total: 4.0000 Each(s)

Bolt

Batch:

M103446 -

32.0

AN641A

Bolt



Comment: Qty.: 2.0000 Each(s)/Unit Total: 2.0000 Each(s)

Bolt

Batch:

M101428 -

CP 07/05/250

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: 19 Date: 07/05/25  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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## Process Sheet

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Drawing Name: 212/205 HIGH AFT X-TUBE ASSEMBLY

Job Number: 31362

Part Number: D212664201

Job Number:



Seq. #:

Machine Or Operation:

Description :

33.0

AN960JD616

Washer



Comment: Qty.: 18.0000 Each(s)/Unit Total : 18.0000 Each(s)

Washer

Batch:

M103395 - 118 + 12 M-103641 ✓

34.0

MS21042L6

Nut



Comment: Qty.: 6.0000 Each(s)/Unit Total : 6.0000 Each(s)

Nut

Batch:

M101660 -

+

CP 07/05/25 ①

35.0

QC4

INSPECT 100% KITS FOR COMPLETENESS



Comment: INSPECT 100% KITS FOR COMPLETENESS

CP 07/05/25 ①

LC 1/07/2008

36.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Identify and pack for shipping as per PPP D212-664-201

ALVC 07/05/25

37.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

CP 07/05/25 ①

Job Completion



U 07/05/25

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

<b>DART AEROSPACE LTD</b>	<b>Work Order:</b>	31362
<b>Description:</b> Crosstube Assembly (205/212 High Aft)	<b>Part Number:</b>	D212-664-241
<b>Inspection Dwg:</b> D212-664-241 Rev: B		Page 1 of 1

### FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

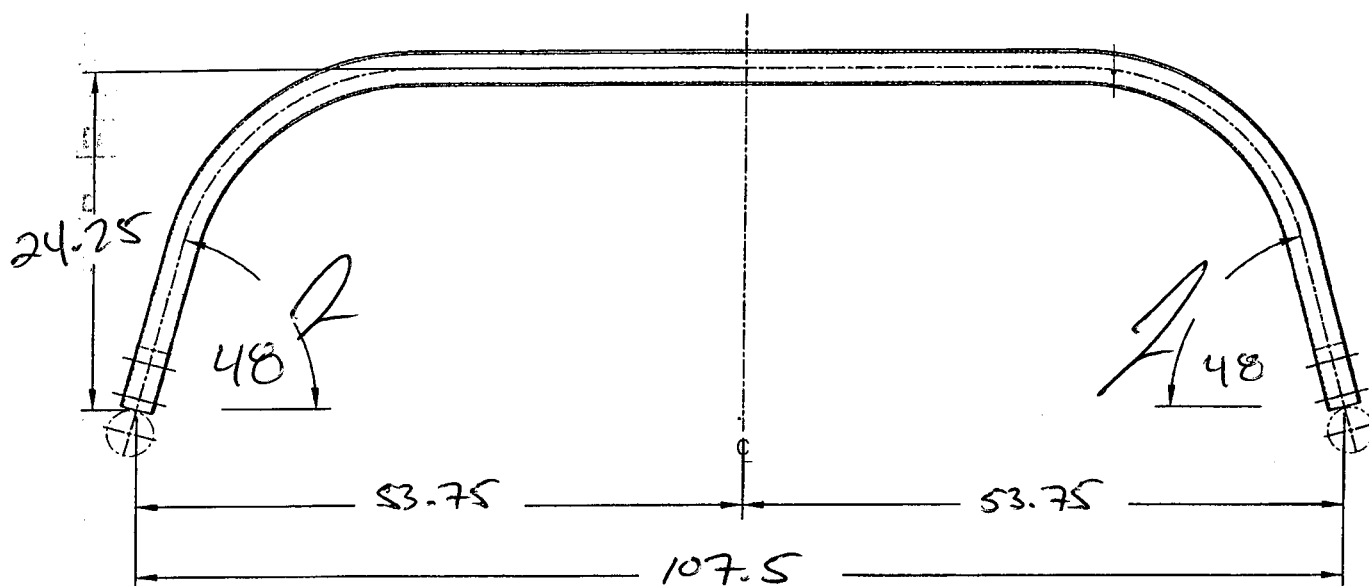
Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	0.200	+/-0.010	2.00	✓		
	R0.063	+/-0.010	0.063	✓		
	2.990	+0.005/-0.000	2.993	✓		
	5.237	+/-0.030	5.240	✓		
	2.600	+0.005/-0.000	2.605	✓		
	2.686	+0.005/-0.000	2.690	✓		
	2.770	+0.005/-0.000	2.774	✓		
	2.854	+0.005/-0.000	2.858	✓		
	2.938	+0.005/-0.000	2.941	✓		
	3.021	+0.005/-0.000	3.025	✓		
	3.133	+0.005/-0.000	3.137	✓		
	3.179	+0.005/-0.000	3.183	✓		
SIDE B	0.200	+/-0.010	2.00	✓		
	R0.063	+/-0.010	0.063	✓		
	2.990	+0.005/-0.000	2.995	✓		
	5.237	+/-0.030	5.240	✓		
	2.600	+0.005/-0.000	2.604	✓		
	2.686	+0.005/-0.000	2.690	✓		
	2.770	+0.005/-0.000	2.774	✓		
	2.854	+0.005/-0.000	2.858	✓		
	2.938	+0.005/-0.000	2.942	✓		
	3.021	+0.005/-0.000	3.025	✓		
	3.133	+0.005/-0.000	3.137	✓		
	3.179	+0.005/-0.000	3.183	✓		
	124.36	+/-0.020	124.36	✓		

<b>Measured by:</b> J.S./ms	<b>Audited by:</b> BL	<b>Prototype Approval:</b>	N/A
<b>Date:</b> 07/04/13	<b>Date:</b> 07-04-13	<b>Date:</b>	N/A

Rev	Date	Change	Revised by	Approved
A	05.04.27	New Issue (P/O D412-664-201)	KJ/JLM	
B	06.03.09	Tolerance for 5.237 was +/-0.001	KJ/JLM	

DART AEROSPACE LTD		Work Order:	31362
Description: Crosstube High Aft (205/212)		Part Number:	D212-664-201
Inspection Dwg: D212-664-241 Rev: B		Page 1 of 1	

Required Dimension	Min	Max
Height	24.24	24.36
1/2 Span	53.66	53.78
Angle	49	52
Total Span	107.32	107.56



Comments

QC15 Inspection	<i>[Signature]</i>
Date	0704-25

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM <i>[Signature]</i>	<i>[Signature]</i>



DESIGN PH	DRAWN BY PH	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
CHECKED [Signature]	APPROVED [Signature]	DRAWING NO. D212-664-241	REV. B SHEET 1 OF 3
DATE 05.02.04		TITLE CROSSTUBE ASS'Y (205/212 HI AFT) NTS	
A	00.12.12	NEW ISSUE	
B	05.02.04	ADD HOLES FOR COMPATABILITY WITH BHT/AA SKIDTUBES	

**RELEASED**  
05-06-09 [Signature]

PH 07.03.20  
**UNDER REVIEW**  
07.03.03 PH  
revise to add  
mugband and cushion

Qty	Part Number	Description
X	D212-664-241	CROSSTUBE ASSEMBLY (205/212 HIGH AFT)
1	D6006-129	CROSSTUBE
2	D2940-1	SUPPORT
2	D2856-600-1009	ABRASION STRIP
4	MS21920-28	CLAMP

#### GENERAL NOTES:

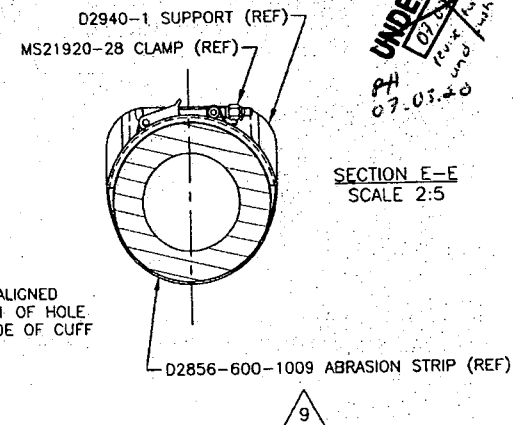
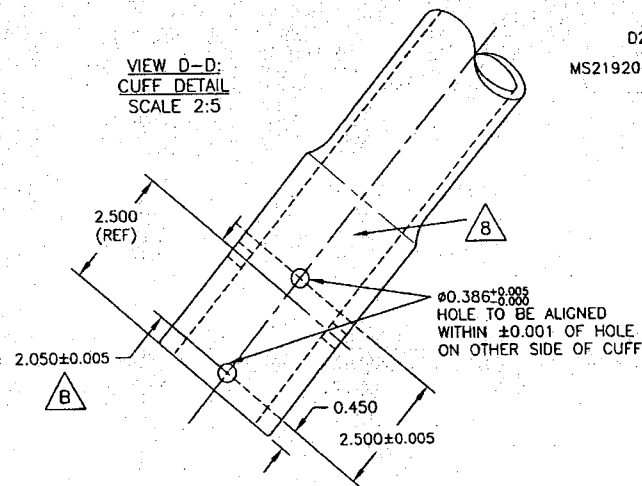
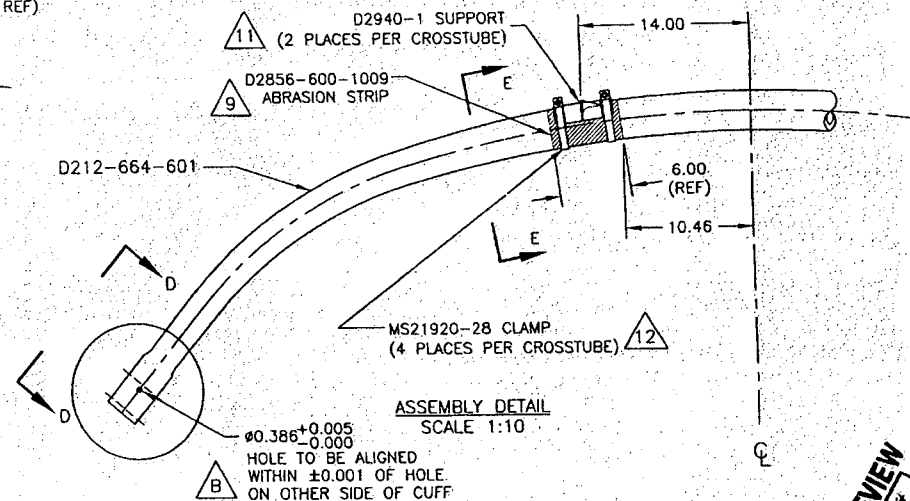
- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 2) MATERIAL: MANUFACTURED FROM D6006-129  
FINISHED LENGTH =  $124.36 \pm 0.020$
- 3) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
PAINT OUTSIDE PER DART QSI 005 4.2
- 4) PART IS SYMMETRIC ABOUT CENTERLINE
- 5) RUN-OFF PART. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
- 6) BEND PROGRESSIVELY WITH A MINIMUM OF 5 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 7) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 8) SCRIBE DART PART NUMBER AND BATCH NUMBER IN THIS AREA WITH VIBRATING STYLUS.
- 9) INSTALL D2856-600-1009 ABRASION STRIP WITH A 0.13 (REF) GAP ON BOTTOM SIDE OF CROSSTUBE, CENTERED OPPOSITE D2940-1 SUPPORT, PER QSI 035.
- 10) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 11) IT IS OPTIONAL TO SEAL EDGES OF SUPPORTS AND ABRASION STRIP USING SIKAFLEX-241/291 SEALANT.
- 12) TORQUE CLAMPS 80 TO 100 IN-LB.

UNCONTROLLED COPY  
RETURN TO  
ENGINEERING  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
31362

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RELEASED  
05.06.09



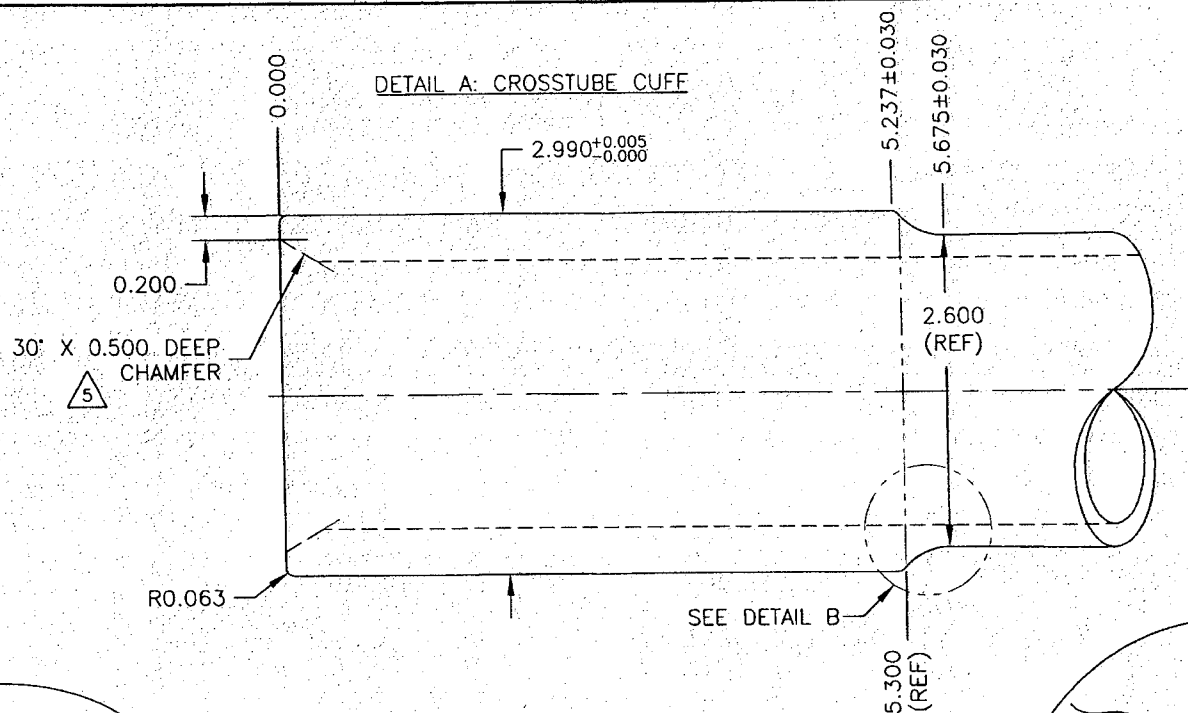
**UNDER REVIEW**  
07-03-20  
PH

SECTION E-E  
SCALE 2:5

DESIGN	DRAWN BY	<b>DART</b>	<b>DART AEROSPACE LTD.</b> WARRICKSBURY, ONTARIO, CANADA
PH	PH		
CHECKED	APPROVED	DRAWING NO.	REV. B
<i>[Signature]</i>	<i>[Signature]</i>	D212-664-241	SHEET 2 OF 3
DATE	TITLE		
05.02.04	CROSSTUBE ASS'Y (205/212 HI AFT) 1:10 SCALE		



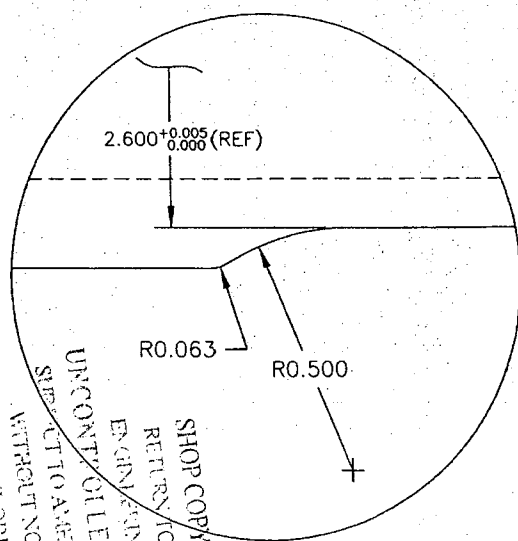
RELEASED  
05.06.09



UNDER REVIEW

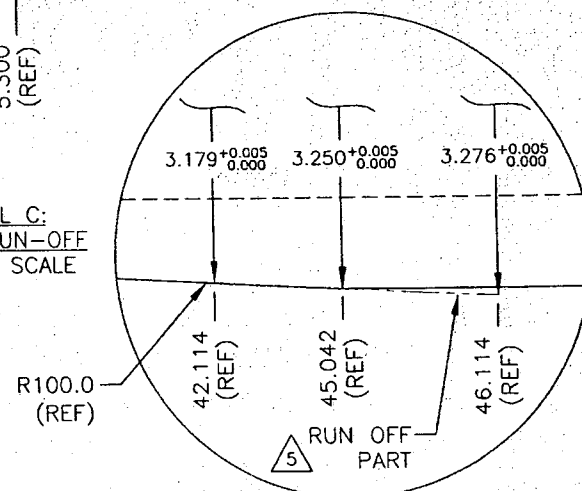
07.03.03 PH

rev. to add  
modification and revision  
# 07.03.20



DETAIL B: CUFF  
TRANSITION  
SCALE 4:1

DETAIL C:  
TAPER RUN-OFF  
NOT TO SCALE



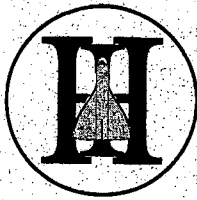
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DESIGN	FH	DRAWN BY	FH	<b>DART</b>	DART AEROSPACE LTD. MARKHAM, ONTARIO, CANADA
CHECKED	[Signature]	APPROVED	[Signature]	DRAWING NO.	REV. B
DATE	05.02.04	TITLE	CROSSTUBE ASS'Y (205/212 HI AFT)	SHEET 3 OF 3	SCALE
					1:1

NO. 31362

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE



# HeathAir

INTERNATIONAL (1991) INC.

681 Ave. Lepine, Dorval, Québec H9P 1G3  
Tél.: (514) 636-1000 • Fax: (514) 636-0031

W.O. N° 36318

A.M.O. Number: 46/90

## NON-DESTRUCTIVE TESTING REPORT

### AIRCRAFT / COMPONENT INFORMATION

REGISTRATION:

MODEL/TYPE:

SERIAL NUMBER:

TOTAL HR/LDG:

OPERATED BY:

BASED AT:

### INSPECTION REQUIREMENTS

Carry out FPI of (8) cross tube (external surface) as per ASTM E-1417-05 and the Dart QSL038, Section 4.1.1 (on file at client) - parts delivered to HeathAir.

Qty (4) P/N D212-664-201 S/N's B31363, B31359, B30422 & B31362.

Qty (4) P/N D212-664-101 S/N's B30418, B30416, B30194 & B30193.

☐ RADIOGRAPHY

☐ ULTRASONIC

☒ PENETRANT

☐ MAGNETIC PARTICLE

☐ EDDY CURRENT

### INSPECTION REPORT

Fluorescent penetrant inspection was performed in accordance with the above requirements on (8) cross tubes.

Note: A Level 3 penetrant was substituted for the requested Level 2 (3 is more sensitive)  
Ardrox 970P25E Batch #04B503.

(8) cross tubes PASSED inspection.

THE MAINTENANCE DESCRIBED ABOVE HAS BEEN PERFORMED IN ACCORDANCE WITH  
THE APPLICABLE STANDARDS OF AIRWORTHINESS

INSPECTED BY:

S. FLETCHER

DATE May 8, 2007

INSPECTION  
STAMP(S) Not Required

### CUSTOMER INFORMATION

CUSTOMER: Dart Aerospace

P.O. NUMBER 00063700

ADDRESS:

CONTACT NAME:

LABOUR	@	\$
MATERIALS	@	
TRAVEL EXPENSES	@	GST
HOTEL EXPENSES	@	PST

INVOICE NO.

TOTAL \$



DESIGN <i>PH</i>	DRAWN BY <i>PH</i>	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>J</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D212-664-241	REV. C SHEET 1 OF 3
DATE 07.03.08		TITLE CROSSTUBE ASS'Y (205/212 HI AFT) NTS	
A	00.12.12	NEW ISSUE	
B	05.02.04	ADD HOLES FOR COMPATABILITY WITH BHT/AA SKIDTUBES	
C	07.03.08	REMOVE -1009 ABRASION STRIP; ADD MAGNOBOND 6398, CUSHION, REVERSE CLAMPS	

**RELEASED**  
07.04.24 *P*  
PER E.N. 025

Qty	Part Number	Description
X	D212-664-241	CROSSTUBE ASSEMBLY (205/212 HIGH AFT)
1	D6006-129	CROSSTUBE
2	D2940-1	SUPPORT
4	D3595-063-530	RUBBER CUSHION
4	MS21920-28	CLAMP (OR MS21920-30)
A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947- 100, TYPE II, CLASS 2 ADHESIVE)

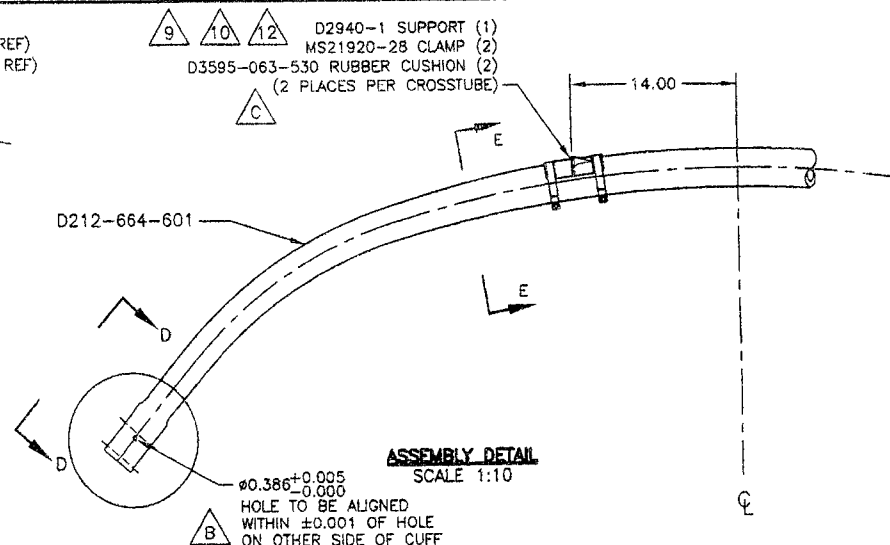
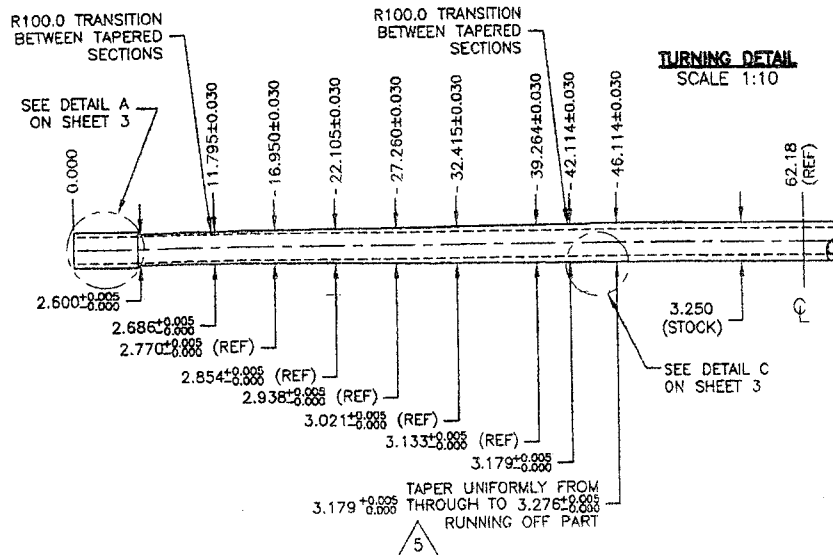
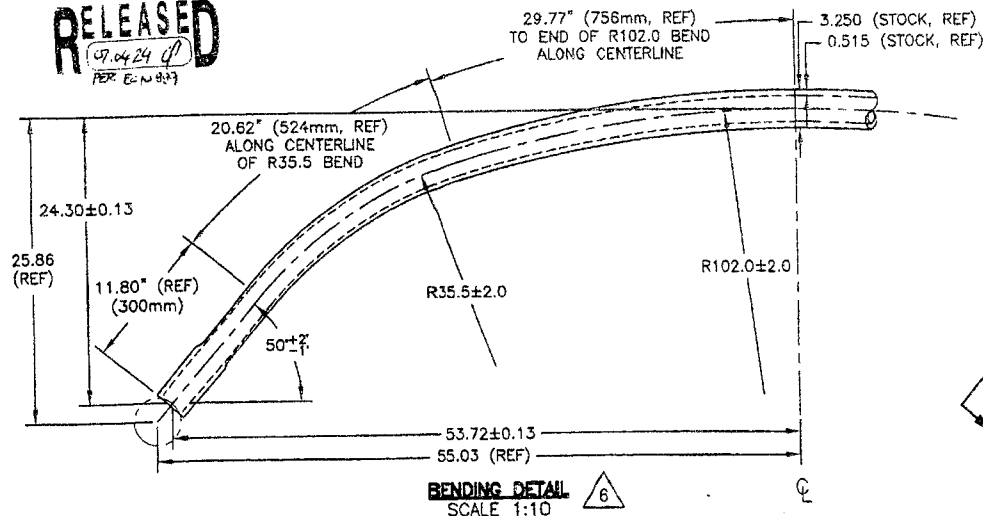
**GENERAL NOTES:**

- W/O 31362*
- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
  - 2) MATERIAL: MANUFACTURED FROM D6006-129  
FINISHED LENGTH =  $124.36 \pm 0.020$
  - 3) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
PAINT OUTSIDE PER DART QSI 005 4.2
  - 4) PART IS SYMMETRIC ABOUT CENTERLINE
  - 5) RUN-OFF PART. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
  - 6) BEND PROGRESSIVELY WITH A MINIMUM OF 5 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
  - 7) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
  - 8) SCRIBE DART PART NUMBER AND BATCH NUMBER IN THIS AREA WITH VIBRATING STYLUS.
  - 9) INSTALL D2940-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
  - 10) INSTALL MS21920-28 CLAMPS WITH D3595-063-530 RUBBER CUSHIONS TO SECURE D2940-1 SUPPORT ON TOP SIDE OF CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE OF CROSSTUBE SUPPORT  
**NOTE:** MS21920-30 CLAMPS CAN BE USED TO ACCOMMODATE VARYING DIAMETERS. ENSURE THERE IS A MINIMUM OF 1.5 THREADS IN SAFETY ON THE NUTS.
  - 11) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
  - 12) TORQUE CLAMPS 80 TO 100 IN-LB.

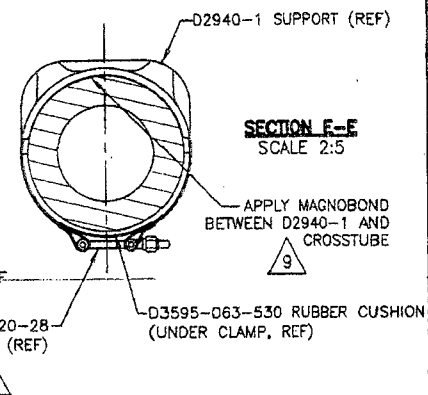
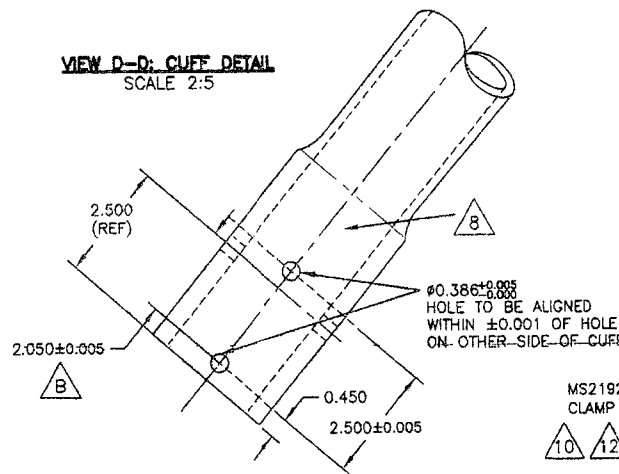
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07.04.24  
PER: E-10-017



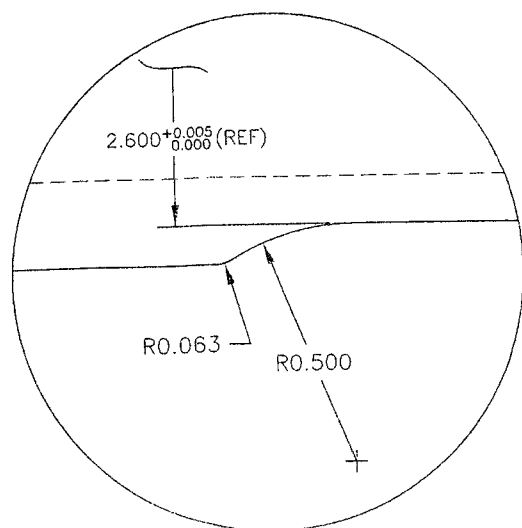
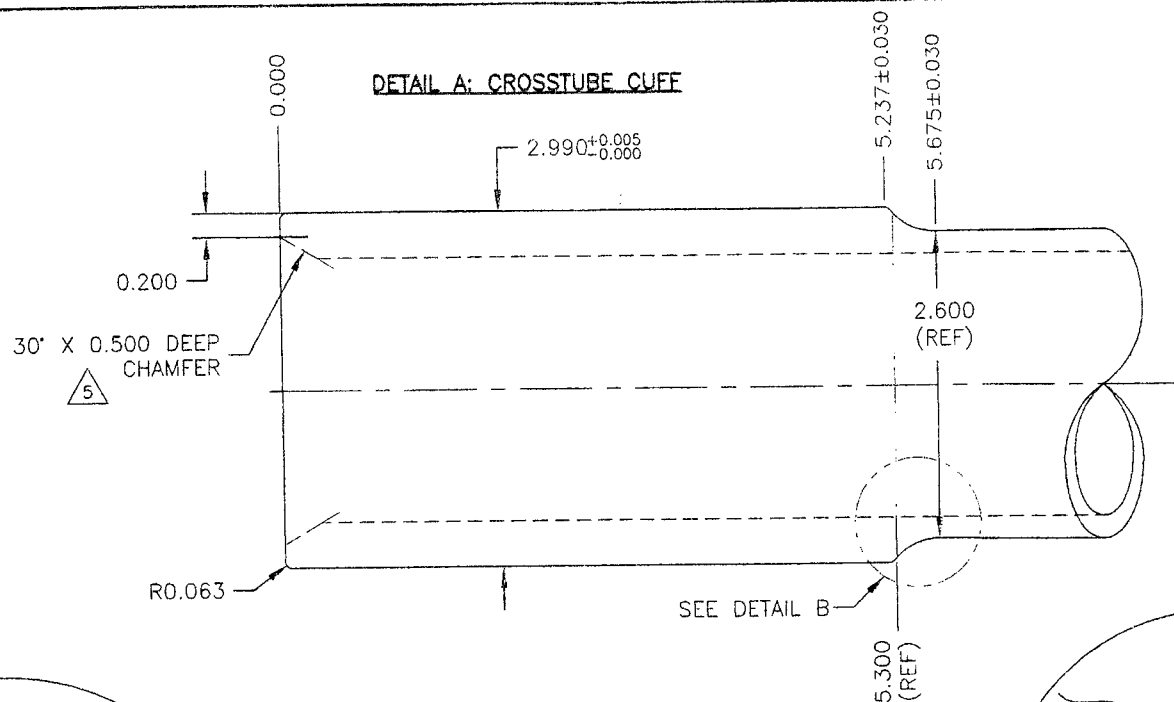
**VIEW D-D: CUFF DETAIL**  
SCALE 2:5



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		DATE 07.03.08	TITLE CROSSTUBE ASS'Y (205/212 HI AF-1) 1:10		

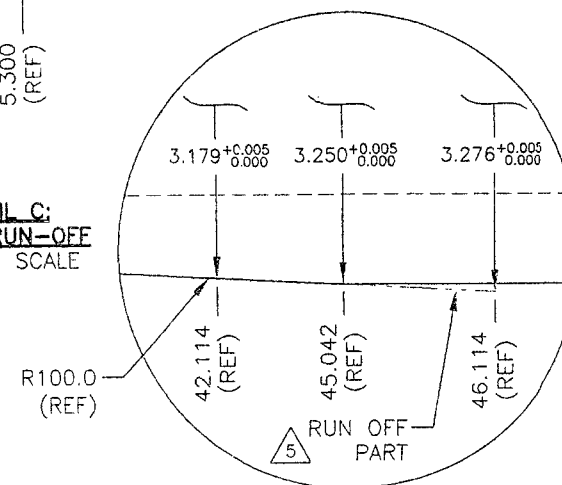
**RELEASED**  
07-04-24  
PER ECN 089

**DETAIL A: CROSSTUBE CUFF**



**DETAIL B: CUFF  
TRANSITION  
SCALE 4:1**

**DETAIL C:  
TAPER RUN-OFF  
NOT TO SCALE**



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PH  
APPROVED  
C

**DART**  
DRAWING NO.  
D212-864-241  
TITLE  
CROSSTUBE ASS'Y (205/212 HI AP 1)

DART AEROSPACE LTD.  
HAWKESBURY, ONTARIO, CANADA  
REV. C  
SHEET 3 OF 3  
SCALE  
1:1